

Amendment to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer program product, tangibly embodied in a machine-readable storage device, the computer program product comprising instructions operable to cause a data processing apparatus to perform operations on a server comprising:

providing a server-side framework to an application on said server, the server-side framework comprising a controller and a view external to the application, the framework supporting a plurality of predefined data types, each data type having a predefined rule;

receiving in the controller from an application a request for an object, the request indicating one of the ~~multiple~~ plurality of predefined data types;

creating, by the controller, the object in response to the request, the object storing a default value of the indicated data type, the default value being stored in the object in a transfer format and in a process format, the process format being different from the transfer format, wherein the controller causes the view to retrieve the default value in the transfer format from the object;

generating a markup language page including the default value in the transfer format;

sending, by the view, the markup language page to a browser on a client;

receiving, in the controller, a user-supplied value in the transfer format from the browser, wherein the controller sends the user-supplied value to the object;

replacing in the object the default value in the transfer format with the user-supplied value in the transfer format, the object automatically converting the user-supplied value from the transfer format to the process format, the object storing the user-supplied value in the process format, the object automatically checking the compliance of the user-supplied value in the process format with the predefined rule; and

if the user-supplied value in the process format complies with the predefined rule, forwarding, by the object, the user-supplied value in the process format from the object to the application and otherwise the controller causes the view to automatically resend the markup language page to the browser with the user-supplied value in the transfer format.

2. (Original) The product of claim 1, wherein the transfer format is a string format.
3. (Original) The product of claim 1, wherein the predefined rule is internal to the object.
4. (Original) The product of claim 1, wherein the predefined rule is external to the object.
5. (Original) The product of claim 1, wherein the operations further comprise storing state information in permanent memory and restoring the object by using the state information.
6. (Original) The product of claim 5, wherein restoring is delayed until transferring.
7. (Original) The product of claim 5, wherein storing state information in permanent memory is performed by storing in hidden input fields in the page.
8. (Previously Presented) The product of claim 1, wherein resending the markup language page to the client includes:
 - identifying a portion of the markup language page that has changed since the markup language page was previously sent; and
 - resending only the portion of the markup language page that has changed.
9. (Previously Presented) The product of claim 1, wherein the object is provided by the software framework running on a server.
10. (Original) The product of claim 1, wherein the instructions do not need to be in a particular programming language.
11. (Original) The product of claim 1, wherein the operations do not require any particular flow logic.

12. (Original) The product of claim 1, wherein the operations do not assume a particular error handling scheme.

13. (Currently Amended) A computer-implemented method operable on a server in a client-server system, the method comprising:

providing a server-side framework to an application on said server, the server-side framework comprising a controller and a view external to the application, the framework supporting a plurality of predefined data types, each data type having a predefined rule;

receiving in the controller from an application a request for an object, the request indicating one of the ~~multiple~~ plurality of predefined data types;

creating, by the controller, the object in response to the request, the object storing a default value of the indicated data type, the default value being stored in the object in a transfer format and in a process format, the process format being different from the transfer format, wherein the controller causes the view to retrieve the default value in the transfer format from the object;

generating a markup language page including the default value in the transfer format;

sending, by the view, the markup language page to a browser on a client;

receiving, in the controller, a user-supplied value in the transfer format from the browser, wherein the controller sends the user-supplied value to the object;

replacing in the object the default value in the transfer format with the user-supplied value in the transfer format, the object automatically converting the user-supplied value from the transfer format to the process format, the object storing the user-supplied value in the process format, the object automatically checking the compliance of the user-supplied value in the process format with the predefined rule; and

if the user-supplied value in the process format complies with the predefined rule, forwarding, by the object, the user-supplied value in the process format from the object to the application and otherwise the controller causes the view to automatically resend the markup language page to the browser with the user-supplied value in the transfer format.

14. (Previously Presented) The method of claim 13, further comprising maintaining on the client a copy of the markup language page that was previously sent and wherein resending the markup language page to the client includes:

identifying a portion of the markup language page that has changed since the markup language page was previously sent; and

resending only the portion of the markup language page that has changed.

15. (Previously Presented) The method of claim 13, wherein the object is provided by the software framework running on a server; the software framework being external to the application.

16. (Currently Amended) A server computer system having at least one processor comprising:

means for providing a server-side framework to an application on said server, the server-side framework comprising a controller and a view external to the application, the framework supporting a plurality of predefined data types, each data type having a predefined rule;[[;]]

means for receiving in the controller from the application a request for an object, the request indicating one of the ~~multiple~~ plurality of predefined data types;

means for creating, by the controller, the object in response to the request, the object storing a default value of the indicated data type, the default value being stored in the object in a transfer format and in a process format, the process format being different from the transfer format, wherein the controller causes the view to retrieve the default value in the transfer format from the object;

means for generating a markup language page including the default value in the transfer format;

means for sending, by the view, the markup language page to a browser on a client;

means for receiving, in the controller, a user-supplied value in the transfer format from the browser, wherein the controller sends the user-supplied value to the object;

means for replacing in the object the default value in the transfer format with the user-supplied value in the transfer format, the object automatically converting the user-supplied value from the transfer format to the process format, the object storing the user-supplied value in the process format, the object automatically checking the compliance of the user-supplied value in the process format with the predefined rule; and

means for forwarding, by the object, the user-supplied value in the process format from the object to the application, if the user-supplied value in the process format complies with the predefined rule, and otherwise the controller causes the view to automatically resend the markup language page to the browser with the user-supplied value in the transfer format.

17. (Previously Presented) The apparatus of claim 16, further comprising means for maintaining on the client a copy of the markup language page that was previously sent and wherein the means for resending the markup language page to the client includes:

means for identifying a portion of the markup language page that has changed since the markup language page was previously sent; and

means for resending only the portion of the markup language page that has changed.

18. (Previously Presented) The apparatus of claim 16, wherein the object is provided by the software framework running on a server.

19. (Previously Presented) The computer program product of claim 1, wherein the default value is a null value.

20. (Previously Presented) The method of claim 13, wherein the default value is a null value.

21. (Previously Presented) The method of claim 1, wherein resending the markup language page to the client includes:

identifying a portion of the markup language page that has changed since the markup language page was previously sent using a writer function; and

resending only the portion of the markup language page that has changed.

22. (Previously Presented) The method of claim 21, wherein the writer function outputs a plurality of information streams, wherein a first information stream contains information associated with the portion of the markup language page that has changed, and a second information stream contains information not associated with the portion of the markup language page that has changed, and wherein resending only the portion of the markup language page that has changed includes the second information stream.

23. (Previously Presented) The method of claim 21, further comprising:
applying an input mask to the markup language page sent to the browser on the client.

24. (Previously Presented) The method of claim 23, wherein resending the markup language page to the browser with the user-supplied value in the transfer format includes filling the input mask with the user-supplied value in the transfer format.